

## Simplifying radicals--Method 1

This symbol  $\sqrt{\quad}$  is called a radical sign.

$\sqrt{24}$  "square root of 24"

$\sqrt[3]{81}$  "cube root of 81"

$\sqrt[5]{500}$  "5<sup>th</sup> root of 500"

$7\sqrt[3]{60}$  "7 times the cube root of 60"

There are two different methods to simplify a radical.

### Method 1

Simplify  $\sqrt{192}$

ask yourself "what perfect square #  
can 192 be divided by?"

$$\sqrt{192} = \sqrt{64 \cdot 3}$$

64 is a perfect square but 3 isn't.  
Can 3 be divided by a perfect square number??

If yes, then find the perfect square #

If no, then write in simplest form.

$$\sqrt{192}$$

$$\sqrt{64 \cdot 3}$$

$$\sqrt{64} \cdot \sqrt{3}$$

$$8\sqrt{3}$$

Ex:  $\sqrt{972}$

$$\sqrt{81 \cdot 12}$$

$$\sqrt{81 \cdot 4 \cdot 3}$$

$$\sqrt{81} \cdot \sqrt{4} \cdot \sqrt{3}$$

$$\frac{9 \cdot 2 \cdot \sqrt{3}}{18\sqrt{3}}$$